



January 8, 2021

Steve Potokar
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

RE: Electron Hydro, LLC response to EPA Information Request

Dear Mr. Potokar:

Enclosed are written responses to the Environmental Protection Agency's (EPA) information request related to Electron Hydroelectric Project's diversion repair and spillway replacement project. In accordance with the instructions EPA has provided, you will be contacted by our counsel's office this afternoon to arrange for the electronic production of documents responsive to EPA's information request. Electron Hydro, LLC, also anticipates supplementing the document production next week.

In addition to documents and records, EPA's information request asked that certain materials be sampled and analyzed by an accredited lab. Electron Hydro, LLC has contracted with an accredited lab to collect the samples, conduct the requested bioassay analysis, and coordinate with another lab to complete the requested chemical analysis. The samples have been collected, the lab work is underway, and analytic results will be produced to EPA as soon as we receive them from the labs.

I certify that the enclosed responses to EPA's Information Request are true, accurate, and complete. I certify that the portions of these responses which I did not personally prepare were prepared by persons acting on behalf of Electron Hydro, LLC, under my supervision and at my instruction, and that the information provided is true, accurate, and complete. I am aware that there are significant penalties for submitting false information in response to this Information Request, including the possibility of fines and imprisonment.

Sincerely,

Thom Fischer
Chief Operating Officer
Electron Hydro, LLC

Enclosure

Enclosure 1

CWA INFORMATION REQUEST

This information is requested pursuant to Section 308 of the Clean Water Act (CWA), 33 U.S.C. § 1318.

A. INSTRUCTIONS

1. Provide a separate narrative response to each question and subpart of a question in this Information Request. Mark each answer with the number of the question (and subpart, if applicable) to which it corresponds.
2. For each question, provide a copy of each document relied on or referred to in the preparation of the response or that contains information responsive to the question.
3. Indicate on each document produced in response to this Information Request or in another reasonable manner, the number of the question to which it corresponds.
4. If requested information or documents are not known or are not available to you at the time of your response to this Information Request, but later become known or available to you, you must supplement your response to EPA. Moreover, if you find at any time after submission of your response that any portion is or becomes false, incomplete or misrepresents the facts, you must provide EPA with a corrected response as soon as possible.
5. Provide the name, title and business contact information for each person who prepared or was consulted in the preparation of your response. If you have reason to believe that there may be persons able to provide a more detailed or complete response to any question contained herein or who may be able to provide additional responsive documents, provide the name, title and business contact information for each such person and the additional information or documents that they may have.
6. If you believe a question is not applicable to the Facility, explain the reason for that belief.
7. The information requested herein must be provided whether or not you regard part or all of it as a trade secret or confidential business information. You may assert a confidentiality claim covering part or all of the information submitted, pursuant to Section 308 of the CWA, 33 U.S.C. § 1318 and 40 C.F.R. Part 2, by labeling such information at the time it is submitted to EPA as “trade secret,” “proprietary,” “company confidential” or other suitable notice.

Information covered by such a claim will be disclosed by EPA only to the extent and by the procedures set forth in statutes and 40 C.F.R. Part 2, Subpart B. Note that certain categories of information are not entitled to confidential treatment. Unless you make a claim at the time you submit the information in the manner

described in 40 C.F.R. § 2.203(b), it may be made available to the public by EPA without further notice to you. See also 41 Fed. Reg. 36902 (Sept. 1, 1976).

8. To aid electronic recordkeeping efforts, EPA prefers you provide all documents responsive to this Information Request in electronic format in accordance with a) through f), below. These electronic submissions are in lieu of hard copy. EPA uses a service (GoAnywhere) to receive large amounts of electronic information. When Respondent has compiled responsive documents and is ready to submit its information, alert Steven Potokar and he will initiate the file transfer request. You will then receive via email a system generated upload files request.
 - a) Provide all responsive documents in Portable Document Format (PDF) or similar format, unless otherwise requested in specific questions. If the PDFs are scanned images, perform at least Optical Character Recognition (OCR) for “image over text” to allow the document to be searchable. Submitters providing secured PDFs should also provide unsecured versions for EPA use in repurposing text.
 - b) When specific questions request data in electronic spreadsheet form, provide the data and corresponding information in editable Excel format and not in image format. If Excel formats are not available, then the format should allow for data to be used in calculations by a standard spreadsheet program such as Excel.
 - c) Provide a table of contents for electronic documents submitted in response to our request so that each document can be accurately identified in relation to your response to a specific question. We recommend the use of electronic file folders organized by question number.
 - d) Documents claimed as confidential business information (CBI) must begin with the file name CBI, followed by the rest of the file name. This will facilitate appropriate records management and appropriate handling and protection of the CBI. Please also mark each page that is confidential business information as such.
 - e) Include a statement certifying the attached files have been scanned for viruses and indicate what program was used.
 - f) Upload the files to GoAnywhere in .zip format. If the .zip file is larger than 10GB, create smaller .zip files (part 1, part 2, part3, etc.).

B. DEFINITIONS

All terms used in this Information Request have their ordinary meaning unless such terms are defined in this Information Request or in CWA Section 502, 33 U.S.C. § 1362 or in the regulations found at 40 C.F.R. Part 122 or 33 C.F.R. Parts 323 and 328, in which case the statutory or regulatory definitions shall apply. For purposes of this Information Request:

1. The terms “you” or “Respondent” mean Electron Hydro, LLC; Electron Management, LLC; Tollhouse Energy Company; Electron Holdings, Inc.; and all subsidiaries, officers,

directors, managers, partners, employees, contractors and agents thereof, as applicable.

2. "Site" means all property owned or operated by Respondent located in the Puyallup River near Electron, Pierce County, Washington.
3. "Document" means any object that records, stores or presents information and includes writings, records, or information of any kind, formal or informal, whether wholly or partially handwritten or typed, whether in computer format, memory or storage device or in hard copy, including any form or format of these. If in computer format or memory, each such document shall be provided in translation to a form useable and readable by EPA, with all necessary documentation and support. Include all attachments to or enclosures with any responsive document.

C. INFORMATION REQUEST

Provide the following information for the Site and where specified, for each facility owned and/or operated by Respondent. Unless otherwise specified, provide all responsive information for the time period between October 1, 2016 and the date of this Information Request.

1. Provide the name and address of the legal owner of the Site. If the owner and operator of the Site are not the same entity, provide the name and address of the operator of the Site and provide contracts/legal documents between entities as they relate to ownership, purchase or buy-back agreements and contract operation.

RESPONSE

Owner and operator of the Site is Electron Hydro, LLC, 1800 James Street, Suite 201, Bellingham, WA 98225-4631.

2. Submit the following information for each facility and/or site owned and/or operated by Respondent and/or its subsidiaries, located within Alaska, Idaho, Oregon and/or Washington:
 - a) documentation of all permit coverage issued pursuant to the CWA since October 1, 2015; including all permits issued by EPA, a state or the United States Army Corps of Engineers, including all permits in accordance with all Nationwide Permits (NWP), such as, but not limited to, NWP 3, 13, 17.

RESPONSE

On March 27, 2017, Electron Hydro, LLC submitted a Joint Aquatic Resources Permit Application (JARPA) for the diversion repair, spillway replacement and shoreline protection reinforcement project (the Project) at the Site. The JARPA sought coverage under Nationwide Permits (NWP 3 and 13) for the Project. On August 8, 2018, the Seattle District, U.S. Army Corps of Engineers, authorized coverage for the Project under NWP 3 and 13. Documents related to this application and authorization are being produced in response to this request.

In March 2017 Electron Hydro, LLC also obtained coverage under the Washington Department of Ecology's Construction Stormwater General Permit. See accompanying documents for SWPPP, including appendices.

- b) all reports documenting any self-inspections, sampling, or records of actions relating to work at each facility and/or site in accordance with above referenced permits performed since October 1, 2015;

RESPONSE

See documents accompanying this response. Records related to the construction stormwater permit are included within the SWPPP appendices produced in response to 2.a.

- 3. Describe all discharge events into the Puyallup River, including dates, times, and volumes of materials that discharged into water from October 15, 2015 to date of this Information Request. For each discrete activity or portion of the work that led to a discharge event, describe the following:

RESPONSE

Refer to the March 27, 2017 JARPA, Diversion Repair and Spillway Replacement and Shoreline Protection Application.

- a) the approximate commencement and completion dates;

RESPONSE

- Upstream bank stabilization, August 16, 2018 to September 15, 2018, completed.
- Downstream bank stabilization, July 15, 2019 to Sept 15, 2019, completed.
- Temporary bypass channel, July 15, 2020 to October 28, 2020, as part of spillway construction work that was started, temporary structure placed, planned spillway reconstruction not completed.

2020 Work Dates

- Commencement: 07/15/2020
- Complete bypass channel (cofferdam): 7/27/2020
- Divert river to bypass: 07/28/2020
- Liner rupture: 07/30/2020
- Stop work order: 08/06/2020
- Work commenced again: 09/23/2020
- Poured concrete footing: 10/1/2020 – 10/3/2020
- Poured concrete center abutment wall: 10/4/2020 – 10/10/2020

- Poured tie-in for center abutment wall to spillway: 10/15/2020 – 10/17/2020
- Complete temporary rock dam construction: 10/22/2020
- Divert river from bypass channel: 10/25/2020
 - *Discharge event occurred* - turbidity level exceedance when diverting river
- Removed cofferdam; Restored site: 10/28/2020
 - *Discharge event occurred* - turbidity level exceedance when cleaning fish ladder as part of restoring site
- Activities regulated by stormwater permit, August 16, 2018 onward and is still active.

b) the approximate acreage of wetland(s) and/or linear feet of channel disturbed;

RESPONSE

No jurisdictional wetlands were disturbed.

In 2018 approximately 200 feet of river bank was armored.

In 2019 approximately 433 feet of river bank was armored.

In 2020 approximately 100 feet of concrete abutment was placed in the river.

In 2020 approximately 1100 feet of temporary cofferdam constructed and removed.

In 2020 approximately 400 feet of temporary Conveyance Channel constructed and removed.

In 2020 approximately 100 feet x 80 feet temporary rock fill spillway constructed.

c) the identity of the person(s) authorizing the work activity;

RESPONSE

USACE, WDFW, Pierce County as permitting authorities, and Thom Fischer, Manager for Electron Hydro, LLC as project proponent.

d) the identity of the person(s) performing the work activity;

RESPONSE

Lists of company employees and contractors accompany this response.

e) the address(s) and telephone number(s) of the person(s) authorizing and performing the work activity as identified in d. and e., respectively

RESPONSE

Company employees may be contacted through Electron Hydro, LLC. Contractor contact information provided in response to 3.d.

- f) the project purpose for the work activity;

RESPONSE

Three species of fish that are found in the Puyallup River are listed as threatened under the Endangered Species Act. Federal agencies that protect ESA-listed fish have requested Electron Hydro to install fish screens at the intake as an improvement to the downstream trap and haul program already in place. The purpose of the Phase 1 work (spillway replacement) on the diversion dam is to manage large volumes of bedload and pass bedload down river so that fish screens could be installed in the diverted water. The spillway would be 62' to 70' wide and 12' tall. As part of the in-river work the left bank was armored to protect the river during high flow events, and a center abutment would tie the new spillway to the existing wood crib dam. Restoring access roads, storage areas and heavy equipment, mobile batch plant, safety are all to support the goal of installing fish screens at the intake.

- g) all work activities conducted at the Site, including any ditch and stream/channel work and the activity dates of the work. Ditch work includes, but is not limited to, creation of any new ditches and changes made to the contours of any existing ditches;

RESPONSE

No new landward drainage conveyances were constructed. Existing drainage facilities have been maintained. Check dams and sedimentation catchments have been established in line with existing conveyances. The location and nature of work on existing ditches has been indicated on the figures provided in response to 5, below.

During the 2020 in-river construction work, a new dewatering plan for the construction work area was put in place when work resumed on September 24, 2020. The plan only includes areas within the river channel, i.e. construction areas within the OHWM channel section.

- h) all machinery or equipment used to perform the work activity in wetlands, streams, or ditches, at the Site;

RESPONSE

Make	Type of Vehicle
Manitowoc	crane
Grove	crane
John Deere 450	excavator
John Deere 450 (long stick)	excavator
John Deere 470	excavator
John Deere 50G	mini excavator
John Deere 345G	excavator
CAT 320C	excavator
CAT 313	excavator
CAT740	rock truck

Komatsu 400	rock truck
Hitachi 750	excavator
Komatsu 490	excavator
Volvo A40E	rock truck

- i) copies of any work orders, receipts, reports, or other documents specific to the work activity in the wetlands, streams/channels, or ditches, including but not limited to construction reports and updates provided to any federal or state agency, or to Pierce County; and

RESPONSE

A list of all expenses related to the Phase I work during 2018 – 2020 is being provided with this response. The list identifies the vendor, date and amount of all payments. Copies of individual invoices or receipts will be provided upon request.

Third-party construction monitoring reports for the work conducted September 23-October 28, 2020, are being provided in response to 2.b, above.

- j) any photographic documentation of the Site prior to and during the work activity.

RESPONSE

Site photos are being produced along with this response.

- 4. Provide a detailed description of the events that occurred at the Site between July 15, 2020 and date of this Information Request, including but not limited to:

RESPONSE

A timeline that details the dates of 2020 construction activities accompanies this response.

- a) the creation of the temporary bypass channel and materials used;

RESPONSE

Construction of the temporary bypass channel commenced on July 15, 2020, and was completed July 27, 2020. Construction methods and timeline are described below in response to 6.c.

Materials Used: river bedload, plywood, field turf, geotextile fabric liner, HDPE liner, steel batons, Conex containers, steel trench boxes, concrete.

- b) the installation of the artificial turf and rubber crumb;

RESPONSE

Artificial turf installation occurred July 20 to 22, 2020. Rolled up segments of artificial turf were trucked to the site from Washington Rock's King Creek Pit. Approximate dimensions of each segment was 8 feet by 28 feet. Each rolled up segment was craned from the truck to the upstream side of the wooden diversion. Rolls were then moved by equipment into position on the gravel bypass channel floor and on top of the wooden spillway and unrolled by crew members. The artificial turf was placed as whole sheets, with smaller pieces cut to size as needed to fit irregular boundaries and edges of the channel bottom. Artificial turf was placed uniformly over the bottom of the bypass channel, with a total estimated area of 2,409 square yards. Geotextile fabric and HDPE liner were installed over all of the artificial turf and overlapped the turf on all sides.

- c) the dewatering of the Electron Hydro Dam forebay and the resulting fish kill;

RESPONSE

On July 28, 2020, Electron Hydro began de-watering operations and closed off water flow to the flume. The morning of July 28, crews walked the upper flume from the headworks to the settling basin and from the basin to ¼ mile upstream of the forebay. Fish recovery from the flume and basin was as follows:

Species	Alive	Mortalities	Recorded Total
Coho 0-1+	16	0	16
Trout Fry	1	1	2
Sculpin	37	47	84
Flume and Basin Total	54	48	102

On July 29, 2020, forebay dewatering and fish salvage operations took place. At approximately 7:30 am, fish were recovered from the fish recovery trap and hauled to the release point downriver from the powerhouse. The number of fish transferred during the trap and haul operation was not recorded. Recovery of fish from the forebay during the dewatering involved seining of accessible pools and netting of fish in the "horseshoe" near the penstock trash rack. Following are the recorded forebay fish recovery numbers:

Species	Alive	Mortalities	Recorded Total
Chinook 0 yr	2	0	2
Chinook 1 yr +	3	2	5
Coho 0 yr	66	0	66
Coho 1 yr+	2	0	2
Trout fry	25	2	27
Cutthroat parr	2	0	2
Rainbow parr	51	0	51

Steelhead smolt	11	11	22
Steelhead adult	11	6	17
Rainbow adult	0	10	10
Bull Trout juv.	27	0	27
Bull Trout adult	3	7	10
Cutthroat	0	0	0
Sculpin	138	0	138
Forebay Total	341	38	379

On July 31, 2020, a visual fish mortality survey was conducted from the shore of the forebay. Surveyors were not able to reach fish for ID confirmation or PIT tag check due to hazardous substrate conditions. Surveyors confirmed 42 adult mortalities were visible from shore but a distinction between the species from shore could not be made.

d) efforts to mitigate the effects of dewatering the Electron Hydro Dam forebay;

RESPONSE

Fish that enter the project at the intake transit the flume to the forebay (about 10 miles). During normal operations, a set of barrier nets are in place where the flume empties into the forebay to facilitate their recovery. Recovered fish are hauled to a point downriver from the powerhouse, where they are reintroduced into the river. When Electron Hydro, LLC, acquired the Project in 2015, it replaced nets and made other improvements to the fish recovery system, and it has routinely conducted trap and haul operations at the forebay.

While the trap and haul system works well, some fish do get past the net and into the forebay. Absent fish recovery, all of these fish would be lost when the forebay is dewatered. The purpose of the fish recovery operation was to salvage the fish that can be recovered as the forebay was dewatered. Thus, the fish recovery effort itself is undertaken to mitigate for the effects of dewatering the forebay.

Electron Hydro, LLC, also implemented fish conservation measures throughout the course of the 2020 work conducted in the Puyallup River. These measures are detailed in documents being produced in response to 2.b, above. Also being produced in response to 2.b. are the reports for monitoring of the fish ladder throughout the 2020 construction period.

e) the release of artificial turf and rubber crumb into the Puyallup River; and

RESPONSE

When crews arrived at the site on the morning of July 30, 2020, they found that overnight the lower portion of the HDPE liner had ruptured and that pieces of HDPE liner, geotextile fabric, and artificial turf had been torn away and transported downstream by river flow. Crew members immediately inspected the cofferdam and downstream area for debris. By evaluating photos and site conditions, Electron Hydro later determined that the lower approximately 617 square yards of liner fabric and turf had torn away. Debris, consisting of artificial turf, geotextile fabric and HPDE liner fragments, was

collected from the river and removed from site. Monitoring of the cofferdam continued throughout the day. No additional tears occurred, and indeed the rest of the HDPE liner, geotextile fabric, and artificial turf remained stable until removed as part of the removal of the temporary bypass channel.

f) efforts to mitigate the effects of the release of artificial turf and rubber crumb.

RESPONSE

On 07/30/2020 as crew members showed up to the work site, crew members saw that the cofferdam had a tear in the liner that occurred during the night. Crew members immediately inspected cofferdam and downstream area for debris. Debris consisted of artificial turf, geotextile fabric, and HDPE liner fragments. Crews surveyed downstream approximately 4,000 feet. Electron Hydro personnel removed torn pieces of HDPE liner, geotextile fabric, and artificial turf from the lower bypass channel and the river channel extending approximately 2,000 feet downstream from July 30, 2020 until all site work stopped on August 6, 2020 (on order of Pierce County; the Corps also issued a Stop Work order on August 7, 2020). The recovered material filled a 30 cubic yard dumpster and a 12 cubic yard dump truck, totaling an estimated 550 square yards.

A contractor (Shane Cherry) conducted a site inspection and river reconnaissance August 9-10, 2020. The river reconnaissance included walking approximately 6,000 feet of the river channel downstream of the release point and spot checks to search for evidence of crumb rubber, fabric and turf about 10 miles downstream at the Electron powerhouse, 15 miles downstream at the Orville Road Bridge, and 19 miles downstream at the Calistoga Bridge in Orting. The results of his reconnaissance and a draft plan for removal of the released material from the river is presented in his August 13, 2020 report, which accompanies this response. On August 13, Electron Hydro submitted the plan to federal, state, and local agencies and requested permission to resume recovery of material from the river. Electron Hydro requested permission to remove turf and crumb rubber three times between the Stop Work order on August 6, 2020 and September 1, 2020.

Electron Hydro did receive permission to resume recovery of liner, fabric, and turf from the river on September 1, 2020. Cleanup work immediately resumed September 1, 2020, and is detailed in a September 17, 2020, memo that accompanies this response. By September 17, all debris identified in a drone survey and in field reconnaissance had been removed from the river and more than 1,166 manhours had been spent on the recovery operation. Electron sent crews to survey the river to find and remove more debris periodically as river levels changed significantly. Between September 17 and October 29, an additional 1,112 manhours was spent on periodic surveys when river levels changed significantly to search for and remove additional debris that may have appeared, for a total of 2,278 labor manhours.

On October 25, 2020 the river was re-diverted to the left bank, drying up the temporary bypass channel on the right bank. During the next two days on October 26 and 27, 2020 the intact liner, geotextile fabric, and artificial turf, with its interstitial crumb rubber, were removed during the dismantling of the temporary channel. The HDPE liner and geotextile fabric were cut into segments, rolled up and removed. Turf was then rolled up into a sausage, strapped, and craned back across the river into trucks. It was then hauled to the upper laydown area for storage. An industrial vacuum was used to vacuum rubber crumb from the ground surface below the removed artificial turf. Once any

crumb rubber was vacuumed up, 6" of gravel was removed from the area under the artificial turf, loaded into trucks, and hauled to the upper laydown area for storage.

Work crews continued to look for crumb rubber, liner, and turf down river until October 29, 2020. Most of the artificial turf, geotextile fabric and HDPE liner were found in the first mile below the Electron diversion, with some found as far down as 4 miles below the diversion. Crews surveyed and removed all trash and foreign material from the Puyallup River starting at 11th Street NW in Puyallup, at approximately river mile 7.6, past Sumner, Alderton, McMillin, Orting, Electron powerhouse, to the Electron intake at mile 41.7. There is a 5-mile section of the river in the canyon above the powerhouse that is too steep to walk at these flows, so no personnel walked this. This is a distance of approximately 34 miles. Crews removed all man-made debris from this 29-mile section of the river. This debris included plastics, shopping carts, golf clubs, lawn mower, tires, bicycles, abandoned camps and other miscellaneous debris.

5. Indicate on a map of the Site all locations where any dredged and/or fill material was placed and all locations where any other work activity took place, identifying the particular work activity that was performed.

RESPONSE

Refer to site plan schematics that accompany this response.

6. Provide the following information about the temporary bypass channel constructed on or about July 20, 2020 and through July 27, 2020:
 - a) the location of the temporary bypass channel in relation to the Puyallup River;

RESPONSE

The bypass channel was located along the right bank of the river.

- b) describe the features of the location of the bypass channel before the channel was constructed;

RESPONSE

Refer to site plan schematics in response to question 5.

- c) exact dates of construction, methods of construction, and any subsequent changes to the channel;

RESPONSE

Construction of the temporary bypass channel started on July 15, 2020, about 700 feet upstream of the diversion structure at a large gravel bar in the middle of the river, which separated the thalweg on the

right bank and a smaller channel on the left bank. An excavator moved bedload material to the right bank to shape the upriver portion of temporary channel and to create a berm in the center of the Puyallup River that would serve as the cofferdam diversion footprint. The cofferdam and reshaping of the upriver channel are shown on figures C-4 and C-5 of the March 2017 application. The actual configuration of the cofferdam and temporary channel were adapted to river channel changes between 2017 and 2020 and are shown in figures accompanying this response (see 5, above).

Beginning on July 17, steel Conex boxes were placed on the wooden diversion structure and along the berm immediately upstream and downstream to create a centerline wall and serve as the left bank side of the cofferdam. The Conex boxes were filled with river bedload material.

As indicated in the March 2017 plans, a liner was installed in the portion of the temporary channel immediately upstream, over, and downstream of the wooden diversion structure. July 17-19, the gravel bed of the temporary channel was prepared for placement of the liner. River bedload material that had accumulated on the wooden apron on the upriver side of the diversion structure was moved upriver and smoothed. The 3 foot tall crest of the wooden diversion structure was removed, and plywood was laid on the wooden apron.

July 20-22, artificial turf and geotextile fabric was installed as underlayment for the HDPE liner. The installation is described above in 4.b. The HDPE liner was installed July 22 to July 27. As installed, water in the temporary river channel flowed over the top of the HDPE liner. The HDPE liner also extended up the sides of the channel and was attached to the top of the Conex boxes and at the right bank.

Work on the temporary bypass channel was completed on July 27, 2020. On July 28, 2020, the flow of the river was diverted into the temporary channel and the work area on the left side of the river channel was dewatered.

d) describe the temporary bypass channel (i.e. width, length, and height);

RESPONSE

Dimensions of the temporary bypass channel were as follows:

- Segment downstream of the liner: about 290 feet long, about 60 feet wide, and about 8 to 10 feet high.
- Liner segment: about 310 feet long, 60 to 70 feet wide, and about 8 feet high.
- Segment upstream of liner: about 500 feet long, 60 to 95 feet wide, and about 8-10 feet high.
- Total length: about 1100 feet. The permitted cofferdam length was 1360 feet.
- Average width: about 65 feet.
- Average height: about 8.5 feet.

e) the permitting authority, if any, for constructing the temporary bypass channel;

RESPONSE

- August 8, 2018, Corps of Engineers authorization under NWP 3 and 13
- June 26, 2018, Pierce County Shoreline Substantial Development Permit
- May 21, 2020, Washington Dept. of Fish and Wildlife Hydraulic Project Approval

f) the permitting authority, if any, for installing artificial turf in the temporary bypass channel;

RESPONSE

The installation of a liner was identified in the drawings accompanying Electron Hydro's March 2017 application and approved by the permits listed in 6.e. The use of an underlayment is a common construction practice when installing a liner, and may be assumed when installing a liner. However, the use of artificial turf as an underlayment material was not specifically authorized.

g) describe the flow diverted from Puyallup River into the bypass channel and any changes to the Puyallup River as a result of the bypass channel; and

RESPONSE

The flow rate through the bypass channel ranged from 225 cfs to 3000 cfs during the period it was in place. The section of the Puyallup River above and below the diversion structure is highly braided and the thalweg randomly moves from bank to bank in response to the movement of the river's bedload during high flow events, except at the diversion structure spillway. While the temporary channel was in place, the river was diverted from the work area around the spillway. Once the temporary channel was removed, the river channel was returned to the left bank at the diversion structure. The river channel above and below the diversion structure continues to respond to the river's movement of bedload material during high flow events and has not been affected by the temporary bypass channel.

h) the permitting authority, if any, for discharging artificial turf and rubber crumb into the Puyallup River.

RESPONSE

Artificial turf with crumb rubber, geotextile fabric, and HDPE plastic were accidentally released to the Puyallup River when the HDPE liner tore. This was an unintentional occurrence.

7. Describe all current and future plans for work at the Site to be conducted by you or your agents.

RESPONSE

Current and future plans include finishing Phase 1 and Phase 2. Phase 1 includes the remaining construction of the inflatable bladder spillway facility. Phase 2 includes construction of fish and sediment exclusion facilities, all on uplands. The completed facilities will prevent fish from entering the water delivery flume.

8. Provide copies of any and all correspondence, authorizations, or permits obtained from any Federal, State, or local government agency authorizing or pertaining in any way to the discharges of dredged or fill material into wetlands, streams, or ditches at the Site. This includes, but is not limited to, any documents between you and Natural Resources Conservation Service, Washington Department of Fish and Wildlife, and Pierce County.

RESPONSE

Authorization by the Corps of Engineers has been provided in response to 2.a, above. Pierce County and Washington Department of Fish and Wildlife permits related to the Project accompany this response, as does correspondence with Pierce County.

9. Identify and submit copies of all sketches, plans, and as-built drawings related to the planning and construction of ditches, roads, driveways, buildings, and facilities at the Site, including all temporary and permanent work.

RESPONSE

See exhibits in response to question 5.

10. Identify and submit copies of all contracts, work assignments, invoices, requests for proposals, or bills related to the work activities identified in response to Question 3, above.

RESPONSE

Contracts and work orders will be produced. See the discussion of invoices and payment records in the response to 3.i, above.

11. Have you ever been cited for violations of CWA section 404 at any facility under your ownership, operation, or control? If so, please provide a date and description of each violation and indicate how each violation was resolved.

RESPONSE

No.

12. Provide the following information about all dredged material; fill material, and/or

excavated material placed on the Site:

- a) original location from which the dredged, fill, or excavated material came and the identity of the person that brought the material from each location;

RESPONSE

All bedload material came from within the Puyallup River. Large rock came from Washington Rock and a local quarry. The identity of the person who delivered large rock from each location would be difficult to determine, but all was hauled by contractors and suppliers listed in the invoice list provided in response to 3.i. Construction materials were obtained from commercial sources, listed in the invoice list provided in response to 3.i.

- b) nature and type of dredged, fill, or excavated material placed (e.g., soil, rock, concrete, solid waste, organic material, etc.);

RESPONSE

During the riverbank protection work conducted in 2018 and 2019, a geotextile fabric was placed against the bank, over which the riprap was placed.

The temporary bypass channel upstream and downstream of the liner segment was constructed of river bedload materials by excavating and building rock/gravel berm to create the channel. The lined segment of the temporary channel was constructed of HDPE liner, over geotextile fabric, over artificial turf, over plywood or natural bedload gravel, and Conex containers and steel trench boxes as the sidewall on top of the existing wooden spillway. Construction of the lined segment of the temporary spillway also used river bedload, untreated fir wood and concrete fasteners, metal baton bars, concrete bags, and sandbags. All materials used in the temporary bypass channel were removed to above the OHWM by October 28, 2020, except for bedload material which was left in the river and graded.

Construction of the permanent abutment began with excavating upstream of the abutment and installing concrete manhole rings to support site conditions and help in site access. These manhole rings were later removed prior to re-diverting the river.

Next the concrete abutment footing, wall, and tie-in to the existing wood diversion were built and concrete poured. After pouring the abutment wall, a temporary spillway was constructed within the footprint of the original spillway. This involved installing steel sheet piling as a membrane. Large rock was placed upstream and downstream of the sheet piling for the temporary spillway.

- c) whether the dredged, fill, or excavated material contained any man-made solid waste, hazardous waste, rubbish, or garbage of any kind; and

RESPONSE

No.

57812501.v1

- d) describe in detail the nature, quantity, and chemical composition of any man-made substance contained in the material.

RESPONSE

Man-made materials used in construction were formulated concrete, steel rebar, wood forms, wood beams (removed from existing spillway), wood and concrete fasteners, steel sheet piles, steel I beam, quarry rock, river bedload material, concrete, grout.

Additional man-made materials used in construction of the temporary spillway were plywood, artificial turf, geotextile fabric, HDPE liner, steel batons, Conex containers, concrete. The constituents of the artificial turf are discussed in response to 13, below. The other materials are common construction materials.

- 13. For the artificial turf installed in the Puyallup River and its rubber crumb component:

- a) describe the source of the artificial turf installed in the Puyallup River;

RESPONSE

The artificial turf was obtained from Washington Rock's King Creek Pit. According to the pit manager, the stored turf was removed from existing sports fields and 90% was supplied by a company called FieldTurf.

- b) describe the age and condition of the artificial turf installed in the Puyallup River;

RESPONSE

Unknown age. Condition good. It is unknown when the turf was made. It is known that the turf was used and removed from a sports field due to the color and markings of the turf.

- c) provide the amount of artificial turf and rubber crumb installed in the Puyallup River;

RESPONSE

Estimated amount of artificial turf installed: 2,409 square yards.
Estimated amount of rubber crumb installed: 16 to 18 cubic yards.

Estimates are based upon calculations provided in *Electron Hydro Diversion Repair and Spillway Replacement Project Material Removal Plan* (August 13, 2020).

- d) provide the amount of artificial turf and rubber crumb released into the Puyallup River;

RESPONSE

Estimated amount of artificial turf released: 617 square yards.

Estimated amount of rubber crumb released: 4-6 cubic yards.

Estimates are based upon calculations provided in *Electron Hydro Diversion Repair and Spillway Replacement Project Material Removal Plan* (August 13, 2020).

- e) provide the amount of artificial turf and rubber crumb captured and removed from the Puyallup River to date;

RESPONSE

The initial response on July 30, 2020 recovered artificial turf, geotextile fabric, and HDPE liner that filled a 30 cubic yard dumpster and a 12 cubic yard dump truck, estimated to represent 550 square yards of material, which were disposed of at a landfill. Continued efforts prior to the stop work orders (August 6/7) collected between one-half and two additional cubic yards of artificial turf, geotextile fabric, and HDPE liner.

Removal work resumed on September 1, following receipt of agency authorizations on September 1. Between September 1 and September 17, removal crews collected six supersacks of artificial turf, geotextile fabric, and HDPE liner.

Crews recovered rubber crumb from several locations: about one-fifth of a five-gallon bucket from one location, a full Ziplock bag from another location, and a few cups recovered with a hand vacuum from another location.

- f) provide the name(s) of the manufacturer(s) of the artificial turf and any existing documentation regarding the toxicity of the artificial turf and/or crumb rubber;

RESPONSE

See response to 13(a). Manufacturer of FieldTurf: Morton Extrusionstechnik GmbH

MSDS and documentation regarding artificial turf is attached to *Electron Hydro Diversion Repair and Spillway Replacement Project Material Removal Plan* (August 13, 2020).

- g) conduct representative sampling of artificial turf and rubber crumb for metals, mercury, and PAH's using an accredited lab and following Standard Methods for sampling and testing. Representative sampling must include at least three samples each, in sufficient quantities, from the turf material currently piled and stored at the Site and turf material from the original source. To ensure samples are representative, sample the top, middle, and bottom of artificial turf stack to include samples from artificial turf and crumb rubber that has been exposed to ultraviolet light and artificial turf and crumb rubber that has not been exposed to ultraviolet light.

RESPONSE

Samples were collected in accordance with this request and are being analyzed by an accredited lab. Analytic results will be produced as soon as they are received from the lab.

- h) conduct representative sampling of artificial turf and rubber crumb to obtain sediment elutriate samples for chemical analysis using the Toxicity Characteristic Leaching Procedure (TCLP test, SW 846 Method 1311). To obtain sediment elutriates for toxicity testing with amphipod *Hyaella azteca*, use the procedures in ASTM Method 1391-03 (2014 update) to obtain elutriate, followed by water column toxicity test with methods in either EPA (2002) or ASTM Method E729. Perform bulk sediment toxicity test with *Hyaella azteca* 10-day bulk sediment toxicity test procedure in ASTM Method E1706-20 (2020 update). Use an accredited lab and follow Standard Methods for sampling and testing. Representative sampling must include at least three samples each, in sufficient quantities, from the turf material currently piled and stored at the Site and turf material from the original source. To ensure samples are representative, sample the top, middle, and bottom of artificial turf stack to include samples from artificial turf and crumb rubber that has been exposed to ultraviolet light and artificial turf and crumb rubber that has not been exposed to ultraviolet light.

RESPONSE

Samples were collected in accordance with this request and are being analyzed by an accredited lab. Analytic results will be produced as soon as they are received from the lab.

- i) Conduct representative sampling using turf and rubber crumb for Fish Acute Toxicity using rainbow trout (*Oncorhynchus mykiss*) using an accredited lab and following Standard Methods for sampling and testing. Representative sampling must include at least three samples each, in sufficient quantities, from the turf material currently piled and stored at the Site and turf material from the original source. To ensure samples are representative, sample the top, middle, and bottom of artificial turf stack to include samples from artificial turf and crumb rubber that has been exposed to ultraviolet light and artificial turf and crumb rubber that has not been exposed to ultraviolet light.

RESPONSE

Samples were collected in accordance with this request and are being analyzed by an accredited lab. Analytic results will be produced as soon as they are received from the lab.

- j) Conduct sampling of sediment downstream of discharge point for rubber crumb, metals, mercury, and PAH's using an accredited lab and following Standard Methods for sampling and testing sediments.

RESPONSE

Samples were collected in accordance with this request and are being analyzed by an accredited lab. Analytic results will be produced as soon as they are received from the lab.